



## **REMARKS/ARGUMENTS**

The Applicants originally submitted Claims 1-21 in the application. No claims have been amended, cancelled or added. Accordingly, Claims 1-21 are currently pending in the application. Additionally, the Examiner's presumption regarding ownership of the subject matter of the claimed inventions is correct.

### **I. Rejection of Claims 1-2, 5, 7-9, 12, 14-16, 19 and 21 under 35 U.S.C. §102**

The Examiner has rejected Claims 1-2, 5, 7-9, 12, 14-16, 19 and 21 under 35 U.S.C. §102(e) as being anticipated by either U.S. Patent No. 6,424,027 to Lamson, *et al.*, (Lamson) or U.S. Patent No. 6,459,049 to Miller, *et al.*, (Miller). The Examiner asserts that Lamson and Miller teach each and every element of independent Claims 1, 8 and 15. (Examiner's Action, page 2). The Applicants respectfully disagree.

Lamson and Miller do not teach, among other things, an integrated circuit package having first and second signal transmission zones including a first conductor having a first width and providing a characteristic impedance within the first signal transmission zone and a second conductor having a second width and providing substantially the characteristic impedance within the second signal transmission zone. (Claims 1, 8 and 15). Lamson teaches a low pass filter, including a network of inductors and capacitors, for removing unwanted high frequency components from fast ramp rate signals and clock lines of a integrated circuit chip package. (Column 2, lines 55-63). The network of inductors and capacitors may be created from a series connection of narrow and wide traces in the layout of the package substrate. (Column 3, lines 16-18).

The narrow and wide traces, however, do not provide a characteristic impedance within a first signal transmission zone and substantially the characteristic impedance within a second signal transmission zone as claimed by the present invention. In fact, Lamson is not even concerned with maintaining a characteristic impedance along a length of the traces. Instead, Lamson employs traces to filter out high frequency of a transmitted signal or clock. (Column 3, lines 16-21).

Miller is directed to providing a structure for receiving electrical signals near a central portion of a structure and distributing the electrical signals to a peripheral portion of the structure. (Abstract). Miller teaches the structure includes electrically conductive traces having at least three segments of varying width. (Column 4, line 7 to Column 5, line 55). The varying width segments, however, do not provide a characteristic impedance within a first signal transmission zone and substantially the characteristic impedance within a second signal transmission zone as claimed by the present invention. In fact, Miller also does not teach dividing an integrated circuit package into different signal zones for equalizing characteristic impedance. Instead, Miller employs the trace segments to provide "an improved routing configuration for the conductors within an integrated circuit." (Column 1, lines 48-49).

Since neither Lamson nor Miller teach a first conductor having a first width and providing a characteristic impedance within the first signal transmission zone and a second conductor having a second width and providing substantially the characteristic impedance within the second signal transmission zone as recited in independent Claims 1, 8, 15 and included in Claims dependent thereon, neither Lamson nor Miller anticipate the claimed invention. Accordingly, the Applicants respectfully requests the Examiner to withdraw the §102(e) rejection with respect to Claims 1-2, 5, 7-9, 12, 14-16, 19 and 21.

## II. Rejection of Claims 3-4, 10-11 and 17-18 under 35 U.S.C. §103

The Examiner has rejected Claims 3-4, 10-11 and 17-18 under 35 U.S.C. §103(a) as being unpatentable over either Lamson or Miller when combined with the knowledge of one skilled in the art. The Examiner asserts that Lamson and Miller teach the invention associated with Claims 3-4, 10-11 and 17-18 except expressly teaching a stiffener or a heat spreader but that it would have been obvious to one skilled in the art to include a stiffener or a heat spreader to the structures of Lamson or Miller to provide the advantageous benefit of mechanical support and heat dissipation. (Examiner's Action, pages 3-4).

As discussed above, however, Lamson and Miller fail to teach, among other things, a first conductor having a first width and providing a characteristic impedance within the first signal transmission zone and a second conductor having a second width and providing substantially the characteristic impedance within the second signal transmission zone as recited in Claims 1, 8 and 15. Furthermore, Lamson and Miller fail to suggest a first conductor having a first width and providing a characteristic impedance within the first signal transmission zone and a second conductor having a second width and providing substantially the characteristic impedance within the second signal transmission zone. Since Claims 3-4, 10-11 and 17-18 also include a first conductor having a first width and providing a characteristic impedance within the first signal transmission zone and a second conductor having a second width and providing substantially the characteristic impedance within the second signal transmission zone, then Lamson and Miller also fail to teach or suggest each and every element of Claims 3-4, 10-11 and 17-18. Lamson and Miller, therefore, in view of the knowledge of one skilled in the art do not establish a *prima facie* case of obviousness of Claims 3-4, 10-11 and 17-18.

Furthermore, one skilled in the art would not be motivated to arrive at the teachings of the claimed inventions given the teachings of Lamson or Miller since Lamson and Miller do not address equalizing character impedance of an integrated circuit but instead Lamson is directed to filtering high frequency and Miller is directed to providing high density signal routing. Therefore, the inventions associated with Claims 3-4, 10-11 and 17-18 are not obvious over Lamson or Miller. Accordingly, the Applicants respectfully request the Examiner withdraw the 103(a) rejection and pass Claims 3-4, 10-11 and 17-18 to issue.

### **III. Rejection of Claims 6, 13 and 20 under 35 U.S.C. §103**

The Examiner has rejected Claims 6, 13 and 20 under 35 U.S.C. §103(a) as being unpatentable over Lamson or Miller and in further view of U.S. Patent 5,487,095 to Hanz, *et al.* (Hanz). The Examiner has asserted that Lamson and Miller teach the claimed invention except expressly teaching a semi-circular cross-sectional junction between each conductor. The Examiner has cited Hanz asserting it would have been obvious to one of ordinary skill in the art to have modified the junction points of either Lamson or Miller to include the semi-circular cross sectional junctions taught by Hanz. (Examiner's Action, page 4). Hanz is directed to providing a constant impedance transition between transmission structures of different dimensions. (Abstract). The Applicants, however, do not believe that Hanz teach or suggest semi-circular cross sectional junctions. Instead, Hanz teaches constant impedance transitions that may include a curve and a bend. (Figures 4 and 5).

In addition, Hanz, like Lamson and Miller, does not teach or suggest a first conductor having a first width and providing a characteristic impedance within the first signal transmission zone and

a second conductor having a second width and providing substantially the characteristic impedance within the second signal transmission zone as recited in independent Claims 1, 8 and 15. Since the combination of Lamson or Miller and Hanz does not teach or suggest all of the elements of independent Claims 1, 8 and 15, the combination fails to establish a *prima facie* case of obviousness regarding dependent Claims 6, 13 and 20 which include the elements of their respective independent Claims.

Furthermore, one skilled in the art would not be motivated to arrive at the teachings of the claimed inventions given the teachings of Lamson or Miller, since Hanz does not address equalizing character impedance of an integrated circuit but instead is directed to providing a constant impedance transition between transmission structures having varying dimensions. Therefore, the inventions associated with Claims 6, 13 and 20 are not obvious over Lamson or Miller in view of Hanz. Accordingly, the Applicants respectfully request the Examiner withdraw the 103(a) rejection and pass Claims 6, 13 and 20 to issue.

#### IV. Conclusion

In view of the foregoing remarks, the Applicants now see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 1-21.

The Applicants request the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application.

Respectfully submitted,

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